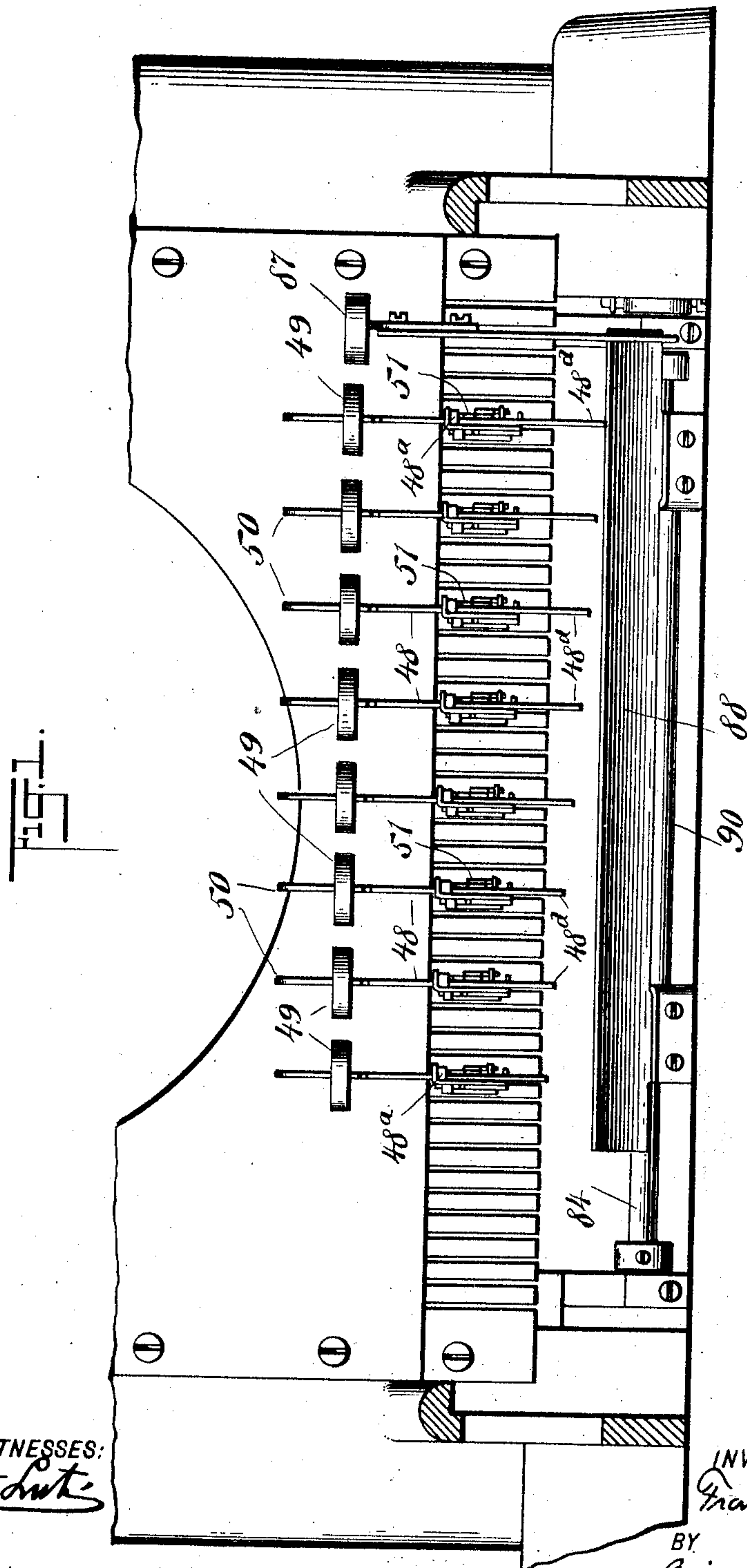


918,103.

F. X. WAGNER.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 5, 1902.

Patented Apr. 13, 1909.
6 SHEETS—SHEET 1.



WITNESSES:

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ATTORNEYS

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6 SHEETS—SHEET 2.

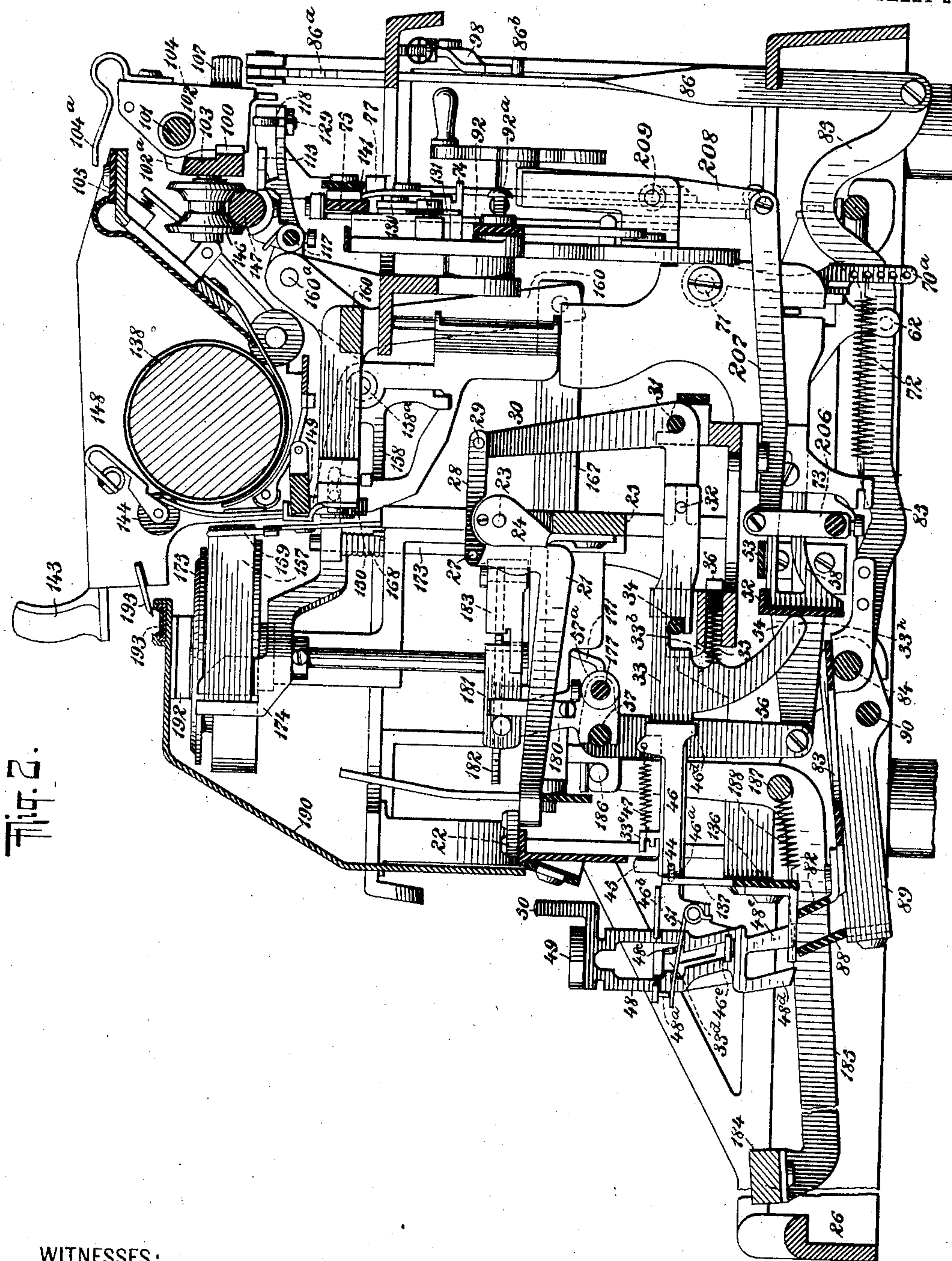


Fig. 2.

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TYPE WRITING MACHINE.
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Patented Apr. 13, 1909.
6 SHEETS—SHEET 3.

Fig. 3.

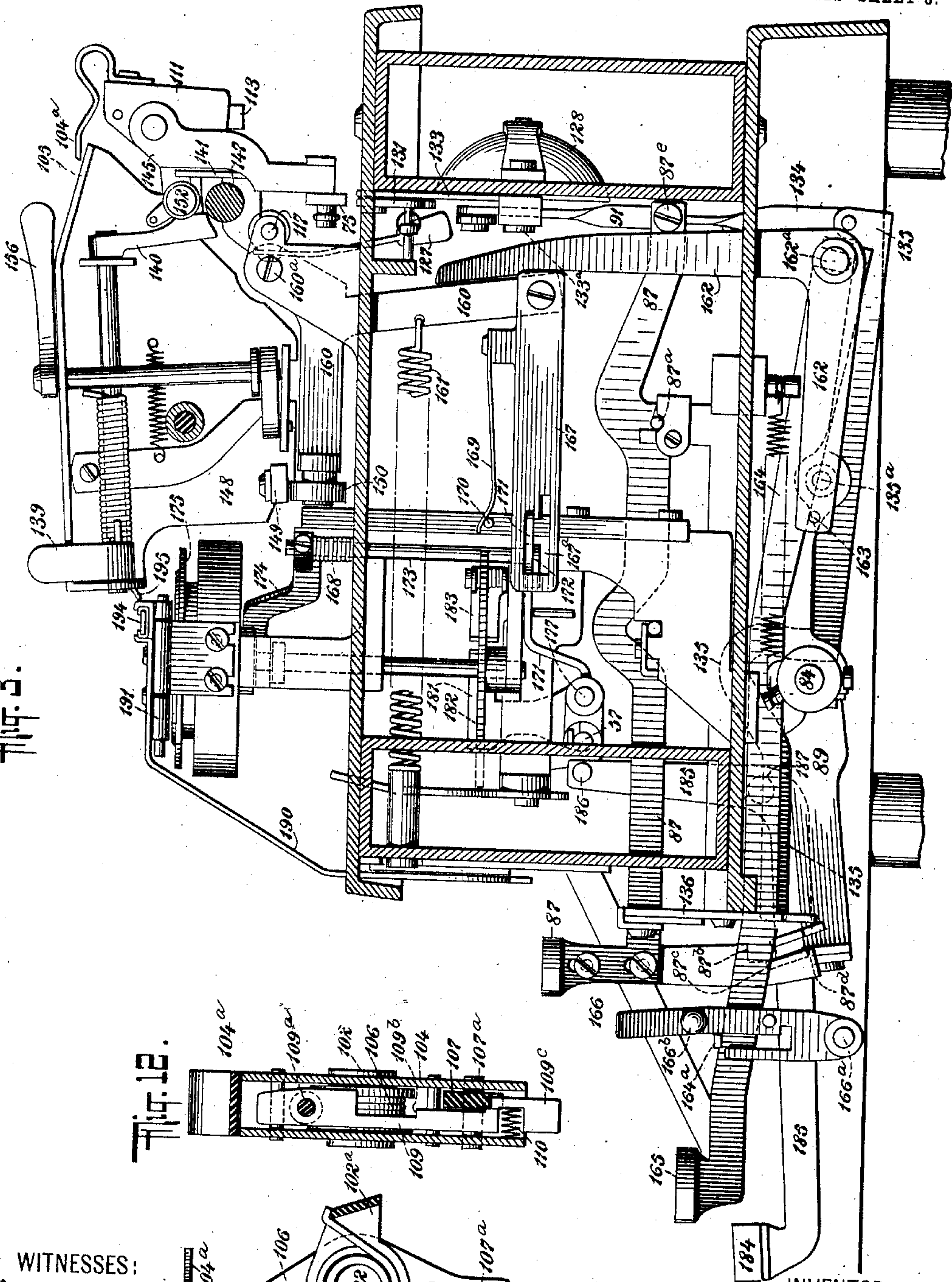
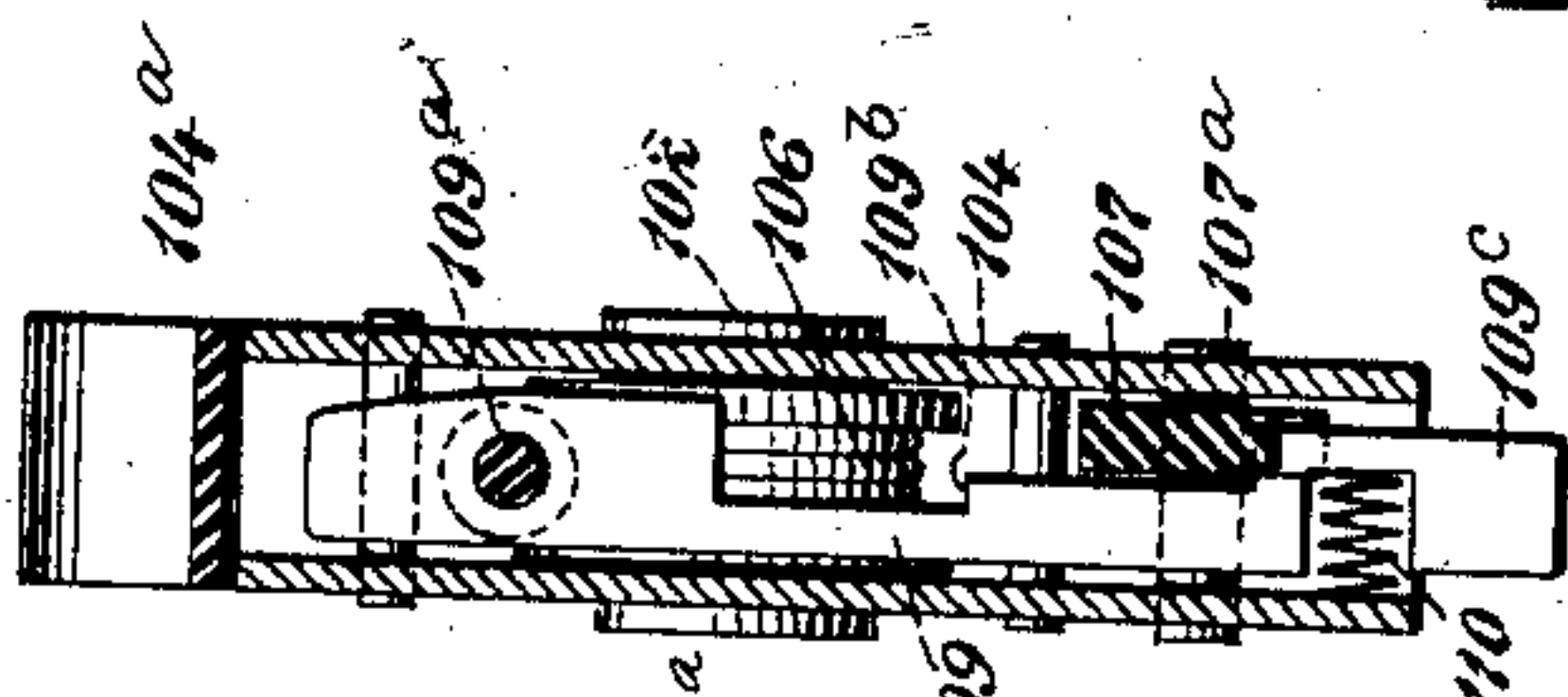


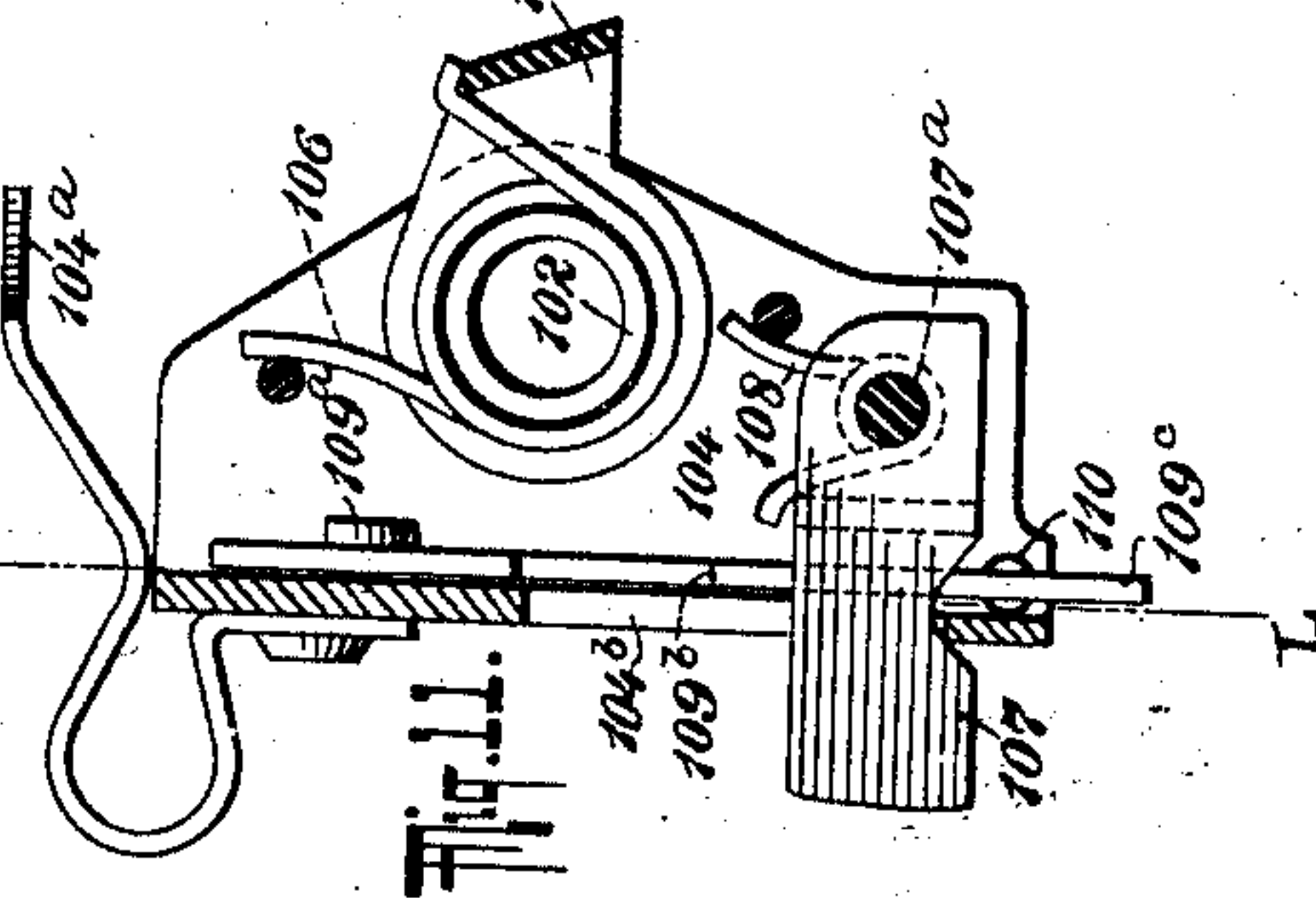
Fig. 12.



WITNESSES:

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Fig. 11.



INVENTOR.

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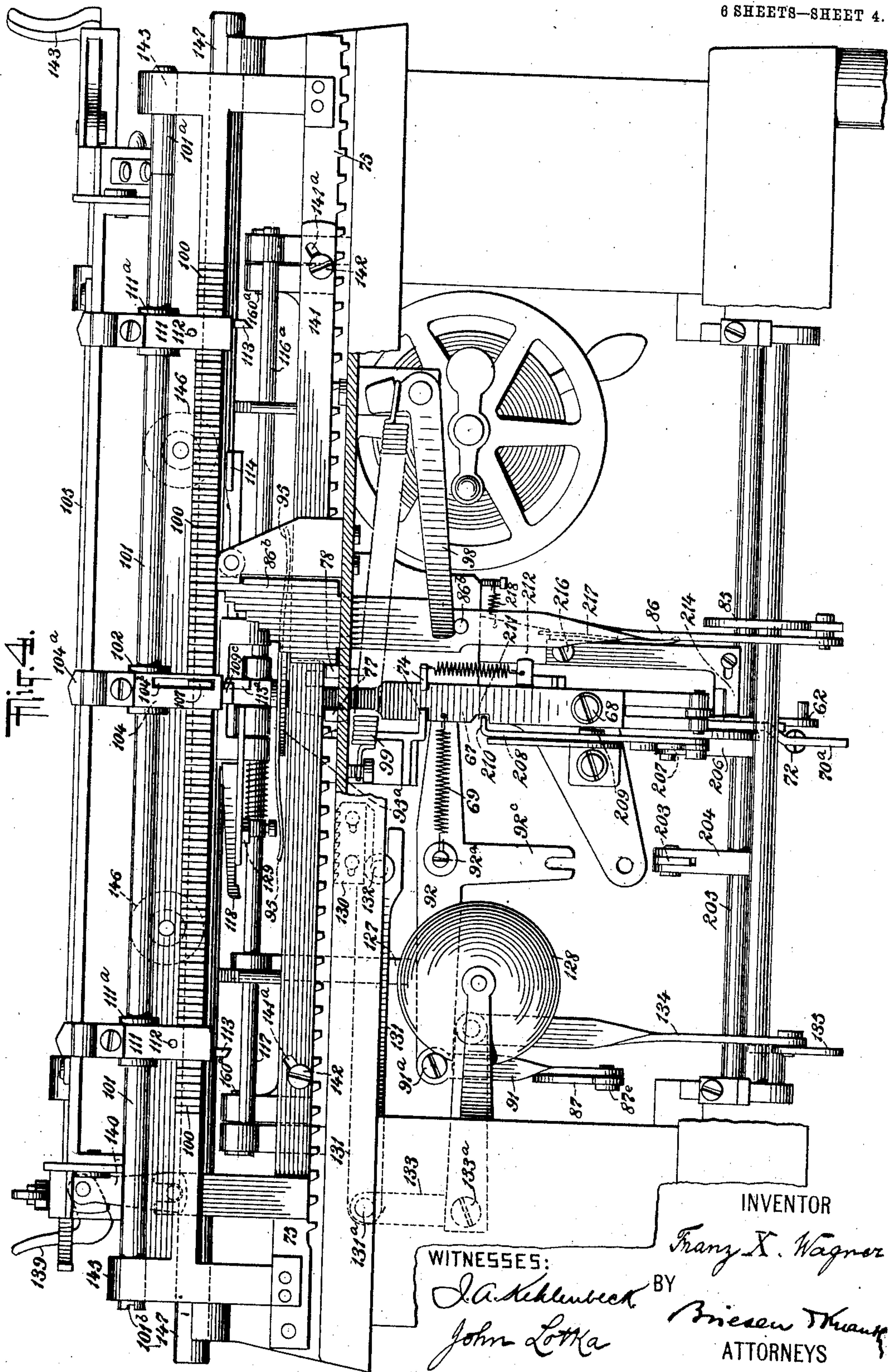
Briesen Thunau
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918,103.

F. X. WAGNER.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 5, 1902.

Patented Apr. 13, 1909.

6 SHEETS—SHEET 4.



WITNESSES:

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918,103.

F. X. WAGNER.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 5, 1902.

Patented Apr. 13, 1909.
6 SHEETS—SHEET 5.

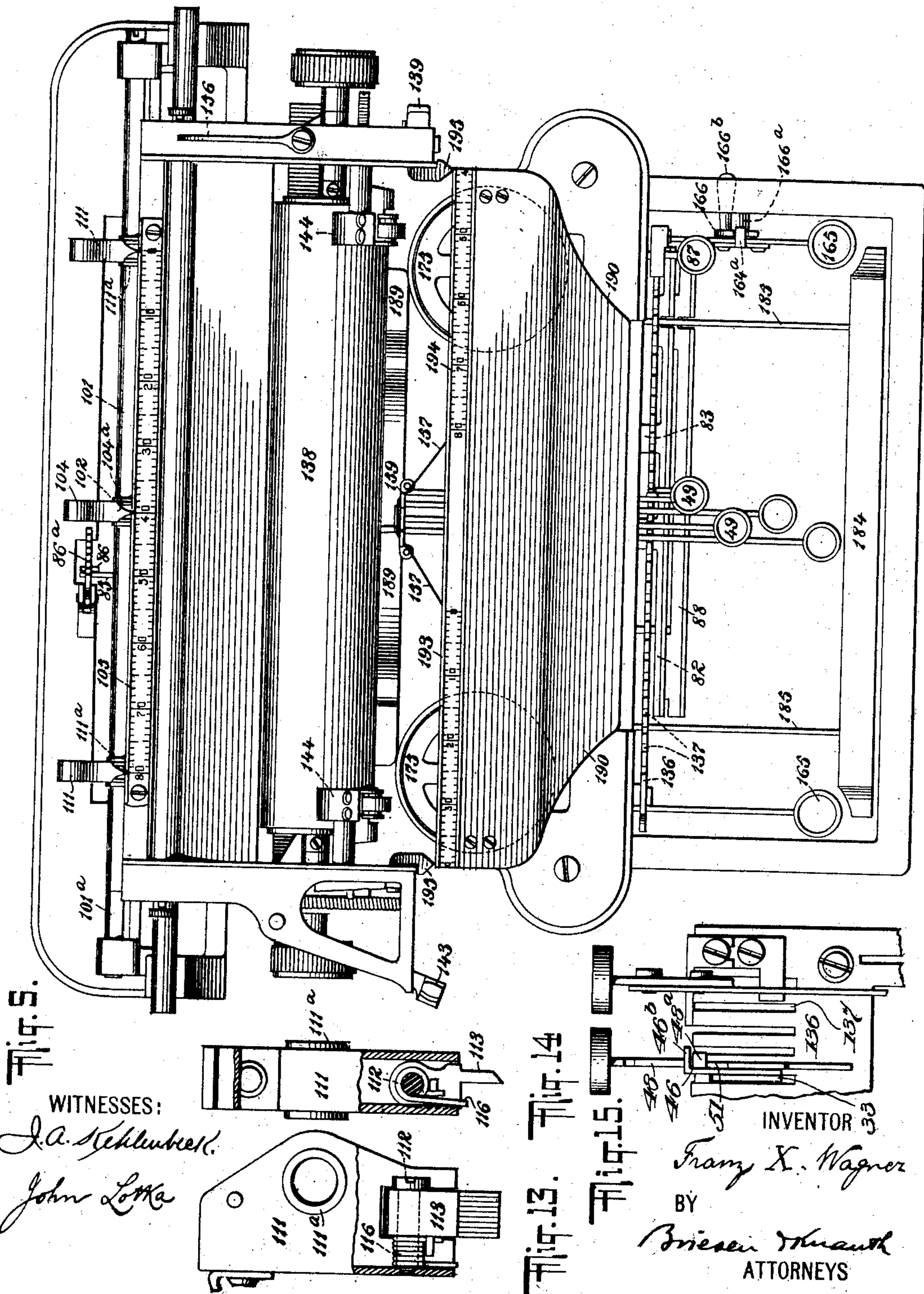


Fig. 5.
WITNESSES:
J. A. Kehlmeier
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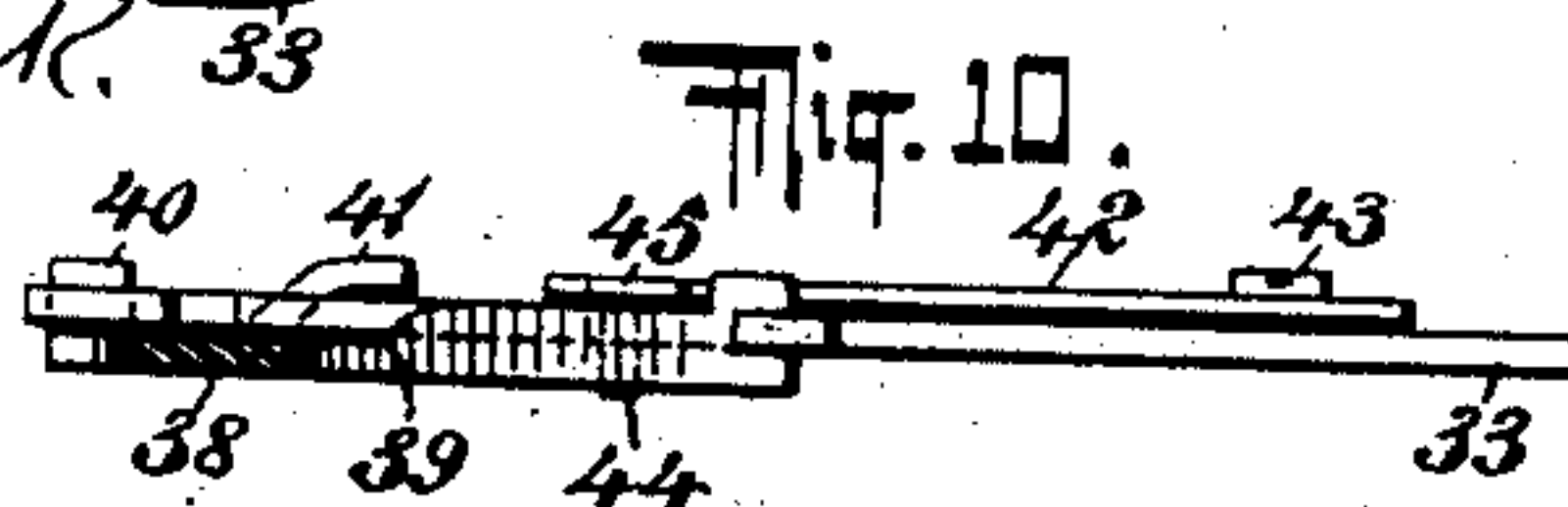
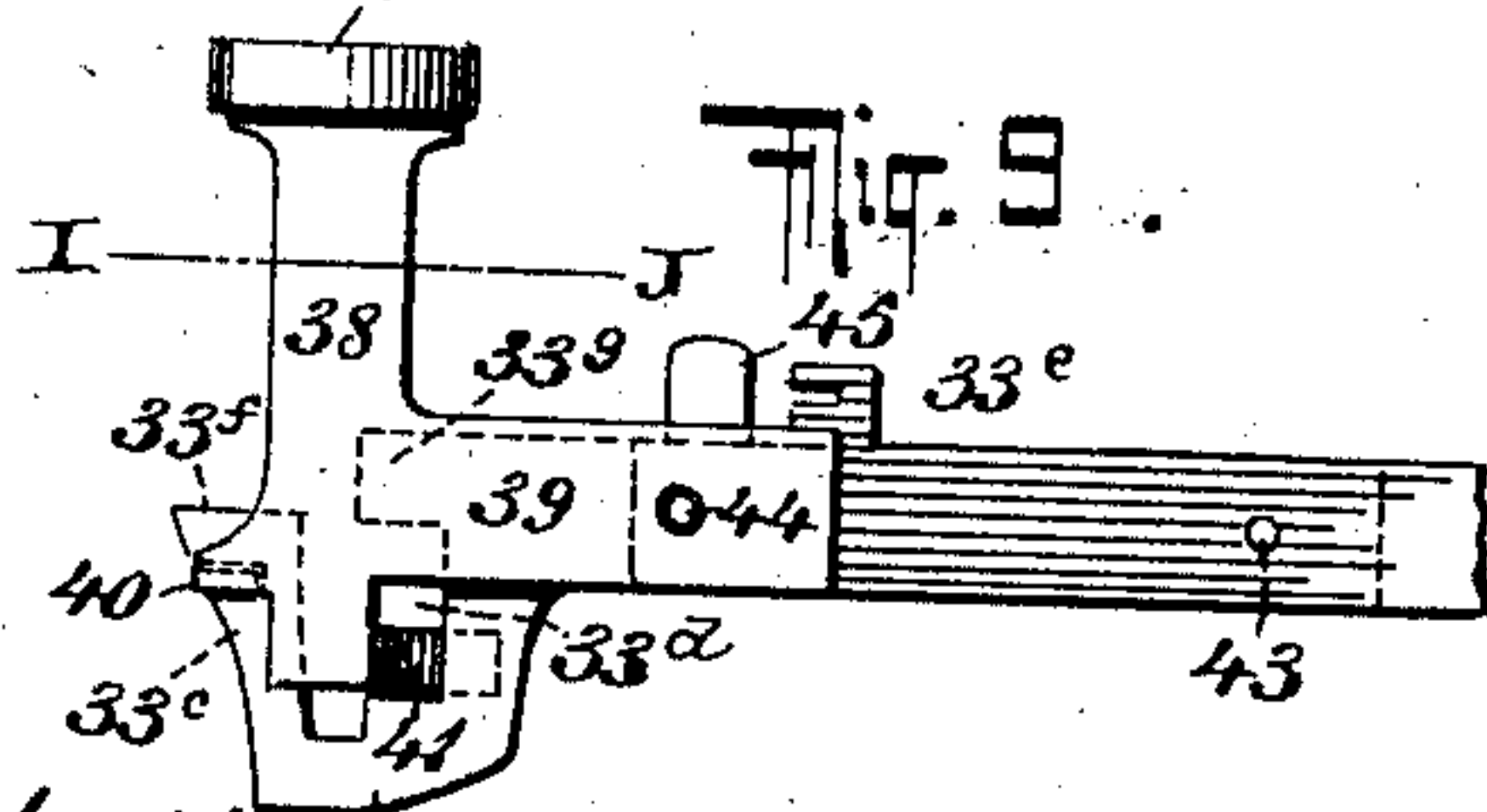
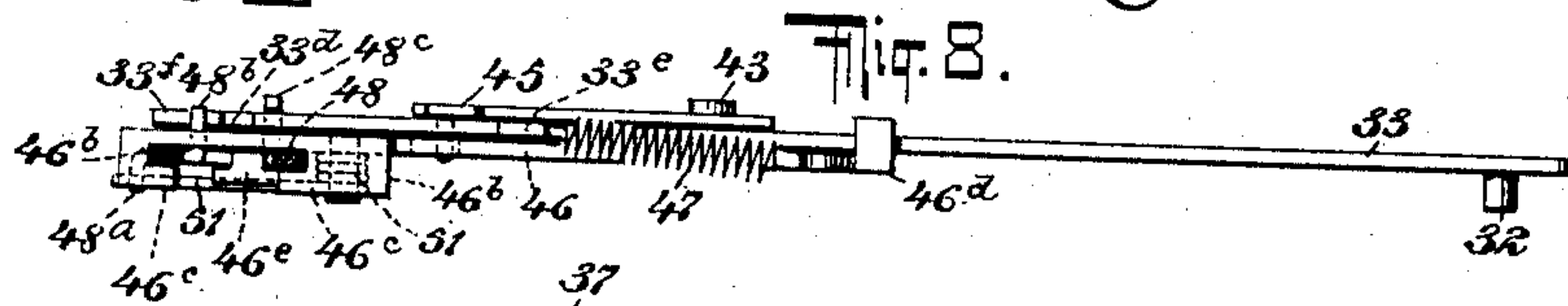
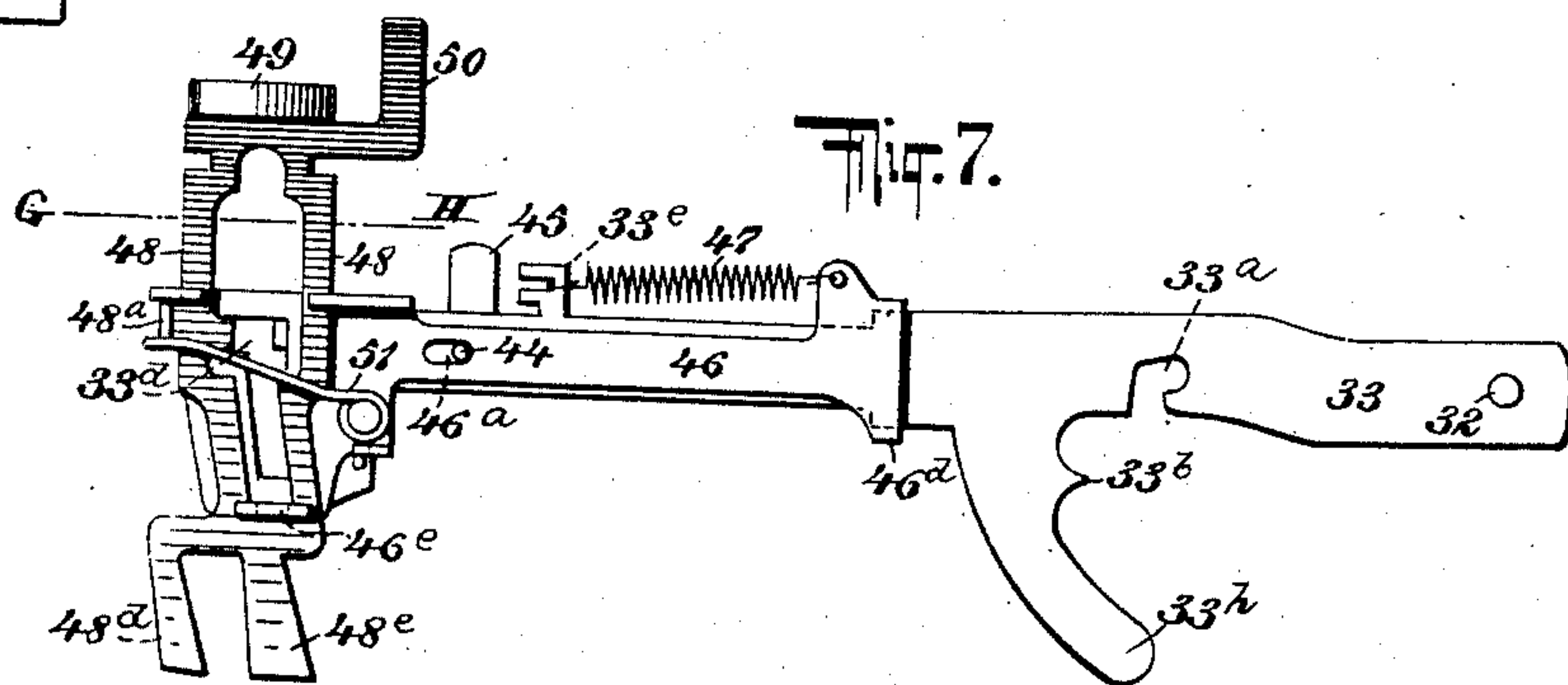
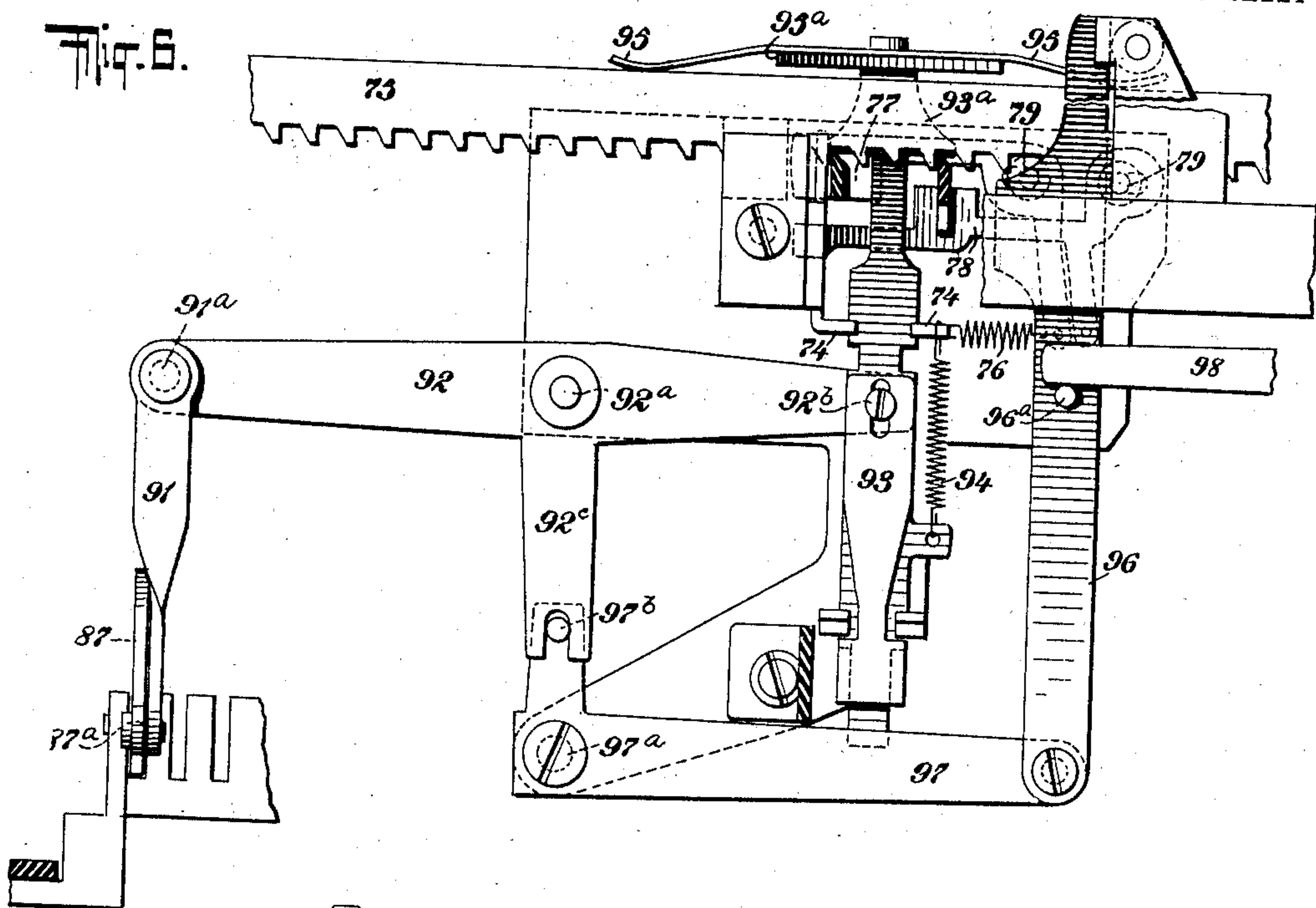
Fig. 13. Fig. 14. Fig. 15.
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F. X. WAGNER.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 5, 1902.

918,103.

Patented Apr. 13, 1909.

6 SHEETS—SHEET 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANZ X. WAGNER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION
OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 918,103.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed July 5, 1902. Serial No. 114,362.

To all whom it may concern:

Be it known that I, FRANZ X. WAGNER, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines, and has for its object to improve machines of this character as regards the several instrumentalities generally found in such machines, and the particular objects of my present invention are—1st. to so construct the keys that they will be capable of performing different functions, according to the movement they are given; thus sundry of the ordinary keys which normally operate the type-levers are so constructed that they may be utilized for operating a tabulating mechanism, and one of the ordinary keys may, besides its customary function, have that of moving the carriage backward. 2nd. to improve the detail construction of the margin stops and of the tabulating stops which move with the carriage.

The invention also consists in certain features of construction and combinations of parts, as will be fully described hereinafter and specifically pointed out in the claims.

I desire it to be understood that while I have shown what I consider at present the best manner of carrying my invention into effect, various modifications may be made in the arrangement and construction of the several parts without departing from the nature of my invention.

Figure 1 is a partial front elevation of a typewriting machine provided with my improvements; Fig. 2 is a central sectional elevation thereof; Fig. 3 is a side elevation thereof with parts in section; Fig. 4 is a rear view of the machine; Fig. 5 is a plan thereof; Fig. 6 is a rear view of the brake and its operating mechanism, and also shows the attachment of a single step tabulating stop to the machine; Fig. 7 is a side view of one of my improved double function keys; Fig. 8 is a sectional plan thereof on the line G—H of Fig. 7; Fig. 9 shows how one of the double function keys may be converted into an ordinary single function key; Fig. 10 is a sectional plan on line I—J of Fig. 9; Fig. 11 is a sectional elevation of one of the tabulating stops; Fig. 12 is a cross-section of the same on

line K—L of Fig. 14; Fig. 13 is a side view of one of the margin stops with parts in section; Fig. 14 is an edge view of such stop with parts in section and Fig. 15 is a partial front view of two keys and the adjacent portion of the frame.

21 are the type-levers carrying the type 22, and fulcrumed at 23 upon brackets 24, which are attached to the segment 25, forming part of or secured to the frame 26 of the machine. Each of the type-levers 21 is connected pivotally, as indicated at 27, with a link 28, the rear end of which is provided with a pin 29 having flat surfaces, as shown in Fig. 18, and this pin is adapted to pass through a slot 30^a into a recess or socket 30^b at the upper end of an elbow-lever 30, fulcrumed upon the machine at 31. The link 28 consists of two members, which receive between them the upper end of the elbow-lever 30 and of the type-lever 21, and these members are made of elastic material, so that their forward ends may be sprung over the pin 27, which connects them with type-lever 21. Thus the forward ends of links 28 may be readily detached when desired from the corresponding type-levers, and by then turning the links upward until the flat faces of pins 29 stand vertical each link may be readily removed from the upper end of the corresponding elbow-lever 30. The lower member of the elbow-lever 30 extends forward, and is slotted to receive a pin 32 upon the rear portions 33 of a key-lever which is fulcrumed upon a rod or pivot 34 arranged to fit into a recess 33^a. The key-lever is pressed forward by a spring 35, one end of which engages a projection 33^b on the key-lever, while its other end abuts against an adjustable screw 36 supported on the frame of the machine. This construction allows the action of each key to be regulated independently.

When the keys are to perform their ordinary function only, they may be constructed as shown in Figs. 9 and 10. Here the front portion of the key-lever comprises a key 37, having a shank 38 and a longitudinal member 39, provided with a lip 40, which extends into a recess at the front end 33^c of the member 33 of the key-lever. There is further provided an arm 41, which extends through an opening 33^d to engage the arm 33 on the side opposite to that on which the member 39 is located. The front member of the key-

lever is further held in position by means of a spring latch 42, which is secured to the members 33 and 43, and is provided at its front end with a pin 44 arranged to pass through a suitable aperture in the members 33 and 39. A projection 45 is provided, so that the latch 42 may be readily manipulated. It will be understood that by swinging the latch upward so as to release the member 39 from the pin 44, the forward member of the key is made free so that it may be first moved forward to disengage the lip 40 from the front portion 33^c, and then upward to entirely separate the parts 37, 38, 39, 40 and 41, from the machine. When these parts, which I may call a removable front section of the key-lever, have been taken off, I may substitute for them another front section, which enables the key-lever to be used for performing some function in addition to its ordinary function of swinging the type-lever into the printing position. This double function attachment is shown in detail in Figs. 7 and 8, and comprises a longitudinal member 46, provided with a slot 46^a, which receives the pin 44. The spring 47 normally holds the member 46 and the parts connected therewith in a forward position, said spring being detachably engaged with a lug 33^c upon the key-lever member 33. At its front end, the longitudinal member 46 is provided with laterally projected flanges 46^b, provided with lips 46^c, projecting toward each other. At its rear end the member 46 has lips 46^d embracing the edges of the member 33. It will thus be seen that the front key section in this case is movable longitudinally of the rear section 33.

Between the flanges 46^b and the lips 46^c is held to slide vertically the shank 48 of the key 49, the latter being provided with an upward projection 50 for the purpose of enabling the front key section to be readily pressed rearward by the operator's finger. The shank 48 is further guided by a T-shaped projection 46^e on the side of the member 46, near its lower end. A spring 51, which is secured to the member 46 and bears against a projection 48^a of the shank 48, normally keeps the key 49 in its upper position. A downward movement of the key 49 and of the shank relatively to the key-lever 33 is normally prevented by projections 48^b and 48^c, of which the former projects above a lug 33^b, while the latter fits under a lug 33^a, shown best in Fig. 12. This lug 48^c serves substantially the same purpose as that of the lip 46^c which is engaged by the projection 48^a of the shank 48. It will be understood that the parts which I have termed the "double function attachment" may be readily disconnected from the key-lever 33 when desired. When the key 49 is pressed down while in the position illustrated by Fig. 2, it operates the corresponding type-lever 21, and also by

means of an arm 33^b acts on the universal bar 52. This bar is movable from front to rear, its movement being limited by the stop 53, which is so arranged that the motion of the key-lever will be stopped before the type-lever is in the printing position, so that the printing will be effected by the momentum the type-lever has acquired. The universal bar is carried by an arm 54 pivotally connected at 55 with a lever 56, fulcrumed at 57. The bar is further connected with an arm 58, which is hung upon a link 59, fulcrumed on the frame at 60. The arm 58 is guided by means of a hook 61 feeding into a slot of the arm 58. At its rear end, the arm 58 is forked and has lateral pins 62, one of which is adapted to be engaged at a time by a coupling member 63, the ends of which are slotted for this purpose. This coupling member is in permanent engagement with screws or pins 64, which are secured to a link 65, the rear end of which is pivotally connected with a vertically movable rod 66, which is rigidly, but adjustably, attached to a feed bar 67 by means of a screw 68. This feed-bar is drawn downward and to one side by a spring 69, and works on the escapement in such a manner as to cause the carriage to advance a letter-space at each downward stroke of the feed-bar.

The feed bar 67 is guided in its vertical movement by projections 74 on the arm, and has a reduced portion 67^a so located that when the feed bar rises to a certain extent the reduced portion will register with the guide 74, so that the feed bar can be readily removed. To one of these projections 74 are secured springs 76, connected with feed dogs 77, 78 adapted for engagement with the rack 75 rigid with the carriage. Each of the feed dogs has a longitudinal slot engaged by a fulcrum pin or screw 79, which is stationary. The length of each of these slots is equal to a letter-space. The upper end of the feed bar has two operating members 80, 81, which are adapted to engage projections 77^a, 78^a on the feed dogs. The distance between the operating members 80, 81, is slightly less than the normal distance between the two feed dogs, so that in the position shown in Fig. 4 the feed bar is in operative relation only to one of the feed dogs. If, now, the feed bar is moved downward, the feed dog 78 will be moved away from the rack 75, and the spring 76 connected with said feed dog will move it lengthwise of the rack to the left in Fig. 4, the distance of a letter-space. At the same time, that portion of the feed bar which has the operating member 81 will move in front or to the right of the portion 77^a so as to prevent the dog 77 from moving to the right under the influence of the spring which propels the carriage. When the feed bar is again allowed to rise, the feed dog 78 in its new position engages

the rack 75, and as soon as the operating member 81 clears the portion 77^a of the dog 77, the rack 75 with the carriage moves to the right the distance of one letter-space. At the end of this movement, the dog 77 will be in operative relation to the feed bar, but the dog 78 will be in such a position that when the operating member 80 comes down it will pass to the right of the portion 78^a without depressing the dog 78. Therefore, at a second downward movement of the feed bar, the feed dog 77 will be depressed, and at the same time the movement of the carriage will be prevented by the fact that the operating member 80 lies in front of the portion 78^a of the feed dog 78. The feed dog 77 will be caused to move to the left by the spring 76, that is, it will return to the position shown in Fig. 4, and when the feed bar 67 rises sufficiently to remove the operating member 80 from the path of the dog 78, the spring which propels the carriage will draw the latter toward the right, thus bringing the parts back to the position shown in Fig. 4. The position of the feed dogs is, therefore, not always the same, but varies at each movement of the feed bar. In any event, however, one of the feed dogs acts as a stop to temporarily hold the carriage, while the other feed dog is shifted lengthwise of the carriage to a new spacing position, and the feed dogs alternate in these functions.

The shanks 48 of the forward key members are provided with toes 48^d, 48^e respectively. The rear toe 48^e is adapted to engage a tabulating bar 82 connected by arms 83 fulcrumed at 84 with a lever 85 which is rigid with said arms 83. The rear end of the lever 85 is connected with the tabulating stop bar 86, movable vertically in suitable guides on the frame. The upper end of the stop bar is formed with a stepped stop 86^a adapted to be interposed in the path of a tabulating stop on the carriage. It will be obvious that according as the stop 86^a is raised more or less, the carriage will be arrested at different points. In order to obtain this result, the toes 48^e of the different keys are of different lengths, as best shown in Fig. 1 so that each key may impart a different movement to the tabulating stop. The front part of the machine would preferably be provided with suitable indications adjacent to each of the keys, which are constructed to operate the tabulating device, or such indications could be marked directly on the key members 50. Preferably one of the keys is arranged to raise the tabulating stop 86^a two steps, which would correspond to tens; the other keys would raise the tabulating stop three, four, five, six and seven steps, corresponding to hundreds, thousands, and higher denominations. It will be understood that the distances between successive steps correspond to letter-

spaces. These double function keys are preferably arranged in the uppermost or rear row of the keyboard and are usually the numeral keys, that is in addition to acting as denominational tabulating keys, these keys are also arranged to operate type bars for printing ordinals. These keys increase in value from left to right, 2, 3, 4, etc. up to 9, and when said keys are used for tabulating purposes as hereinbefore described, the carriage movement which they allow corresponds to the ordinal value of said numeral keys. That is the numeral key 3 will cause the carriage to jump to a space one denomination higher than will the numeral key marked 2, the movement increasing one letter space from one numeral key to the next at the right hand of it. It will therefore be seen that the relative lateral movement of the carriage is in accordance with the ordinal value of the respective numeral keys.

When it is desired to have the tabulating mechanism operate in the usual way only, that is, without any denominational stops, the operator depresses a tabulating key 87 located at the right-hand end of the machine (see Figs. 3, 5, and 15). This key is fulcrumed at 87^a, and has a shoulder 87^b, which is adapted to engage the tabulating bar 82. By pressing the tabulating key 87, the stop 86^a will be raised one step only. The depression of the key 87, or of any one of the keys adapted to engage the tabulating bar 82, is also adapted to operate a carriage release mechanism and a brake mechanism. For this purpose, each of said keys is provided with a second toe or projection in front of the toes 48^d, 87^b. The front toes 48^d are adapted to engage a release bar 88, carried by arms 89, fulcrumed at 84, and connected by a cross bar 90. The arms 89 are loose relatively to the arms 83. The release bar 88 at its upper edge engages a toe or shoulder 87^c on the tabulating key 87, and at its lower edge it engages a lip 87^d on said tabulating key. Thus when the release bar 88 is depressed by any one of the toes 48^d, the tabulating key 87 will be caused to move downward at the same time. The rear end of the tabulating key is connected at 87^e with a link 91, which is pivotally connected at 91^a with a lever 92, fulcrumed at 92^a. This lever has a pin and slot connection 92^b, with a brake and a release bar 93, which is drawn upward by a spring 94, and has a suitably guided movement in a vertical direction. The release bar at its upper portion has a member 93^a arranged to engage the feed dogs 77, 78, so that upon a downward movement of the bar 93, the feed dogs will both be thrown out of engagement with the rack 75, thus allowing the carriage to be propelled by its spring. The upper end of the bar 93 also carries a brake 95 in the nature of a semi-elliptic spring acting in conjunc-

tion with a pad or cushion 95^a. The ends of the spring normally do not touch the upper surface of the rack 75 at all, or only very slightly. When the bar 93 moves
 5 downward, the pressure of the spring arms is gradually increased so as to augment the friction, and toward the end a still greater friction is produced by the engagement of
 10 the brake cushion 95^a with the upper surface of the rack 75. It will be obvious that the release and brake will also be operated in the same manner when the key 87 alone is depressed.

In cases where it is not desired to use the
 15 particular stepped tabulating stop described, I may substitute therefor an ordinary stop 96, as shown in Fig. 6, which stop is vertically movable and is connected at its lower end with a lever 97, fulcrumed at 97^a and having
 20 a loose connection at 97^b with an arm 92^c on the lever 92. Whether the stop 86 or the stop 96 is used, the stop is normally kept in its lower position by means of an arm 98 engaging a pin 86^b or 96^a respectively, said arm
 25 being under the influence of a spring 99 (see Fig. 4).

The tabulating stop on the carriage which coöperates with the mechanism just described is shown in detail in Figs. 14 and 15.
 30 This stop is adapted to be adjustably held in position on the rack 100 which is rigidly connected with the carriage and the teeth of which correspond to letter-spaces. The stop is mounted to slide lengthwise on a bar or
 35 rod 101, also rigid with the carriage. The stop comprises a sleeve 102 arranged to embrace the rod 101, and provided with a projection 102^a adapted to ride on a bar 103 of the carriage. The stop has another member
 40 104, which at its upper end is provided with a pointer 104^a arranged to indicate on a scale 105. A spring 106 (shown best in Fig. 11) tends to throw the projection 102^a down on the bar 103, and the member 104 in a forward
 45 direction at its lower portion. In front of this lower portion is located the rack 100 hereinbefore mentioned. With this rack is adapted to be engaged the stop proper 107, pivoted at 107^a, and pressed downward by a
 50 spring 108 into the path of the stop 86^a or 96. The forward edges of the sides of the member or casing 104 are adapted for locking engagement with the rack 100. The stop proper 107 projects through a suitable opening 104^b
 55 in the casing 104, and may, when desired, be swung by hand into an inoperative position. When in its inactive position, the stop proper is held from outward movement under the influence of the spring 108 by means of a
 60 latch 109, pivoted at 119^a and having a shoulder 109^b to hold the stop proper 107. This latch is under the influence of a spring 110, and has a finger-piece 109^c projecting exteriorly of the casing 104, so that by press-
 65 ing this finger-piece to the left (see Fig. 12),

the stop 107 may be released to be thrown outward by its spring 108. This construction permits the stop to be rendered inactive whenever desired, and the adjustment of the entire stop lengthwise of the carriage is ef- 70
 fected by swinging the casing 104 relatively to the sleeve 102 against the tension of the spring 106, and then sliding the entire stop on the rod 101 and bar 103 until the proper position is reached. While I have shown 75
 only one stop of this character, it will be understood that two or more of them may be provided, thus enabling the carriage to be stopped successively at different points.

The margin stops are shown best in Figs. 80
 4, 13 and 14. Each of these stops comprises a casing 111 provided with a sleeve 111^a arranged to fit on the same rod 101 which carries the tabulating stop or stops. These margin stops are also engaged with their cas- 85
 ings between the teeth of the rack 100 and are adjustable lengthwise of the carriage in the same manner as the tabulating stop. Within each of the casings 111 is pivoted about an axis 112 extending transversely of 90
 the rod 101 a margin stop proper 113, adapted to engage the permanent stop 113^a. The ends of the carriage are adapted to engage coöperating relatively stationary stops 114, 115, respectively. Each margin stop 95
 113 is pressed in one direction by a coiled spring 116 against the casing 111, so that the margin stop may yield in one direction, but will act as a stop when the carriage moves in the opposite direction. Of course the ar- 100
 rangement of the stops is such that one of them will stop the carriage on its movement from right to left, and the other will stop it on its movement from left to right. The stationary or permanent stop 113^a is mount- 105
 ed on a rock-shaft 116^a, and on a rock-shaft 117 is rigidly secured the bell-trip 118. With the stop 113^a is rigid or integral an arm 119 having a stop pin 120 projected into en-
 110 gagement with the bell-trip. A spring 121 acts to keep the bell-trip against the pin 120. The shaft 116^a also carries a crank arm 122, which is connected by a link 123 to a release key lever 124, pivoted at 125. By pressing the release key 126, the permanent stop 113^a 115
 is swung out of the path of the margin stops 113, so that if desired the printing may be continued on the margin. It will be understood that the margin stops proper 113 can swing in an inward direction only, and cannot 120
 swing outward. Therefore, when the carriage moves in one direction one of the stops 113 will act to arrest the carriage, but the other stop 113 will swing over the permanent stop without any action. The shaft 125
 117 which carries the bell-trip 118 is also provided with a striker 127, arranged to ring the bell 128. As shown in Fig. 4, that face of the trip 118 which is adapted to engage the margin stop 113 is beveled so that as the carriage 130

approaches the end of the line, the bell-trip and the striker will be moved to one side against the tension of the spring 121, and as soon as the margin stop 113 clears the bell-trip, the spring will restore the parts to their first position, and will throw the striker against the bell. In order that the action of the bell may be timed, the bell-trip proper may be adjustable on the arm carrying it in a direction lengthwise of the carriage. This may be done in any suitable manner, for instance, by means of an adjusting screw 129 engaging a slot of the carrier.

The permanent stop 113^a which becomes operative at the end of the line, may be movable lengthwise of the carriage path, so that before the said stop positively arrests the carriage, it will receive a certain movement, and this movement of the permanent stop may be utilized for the purpose of locking the key levers before the carriage is arrested. The mechanism for effecting this is more fully described hereinafter, and comprises a stop member arranged to engage and lock the universal bar, so that the key levers cannot be operated. Even when the said locking mechanism for the key levers is employed, the keys may be released again by pressing the key 126 so as to continue printing on the margin whenever desired.

To enable the carriage to be moved back one space or more, I provide a toothed dog 130, secured on an arm 131, preferably by an adjustable connection. This arm is guided upon a pin or screw 132, and is connected at 131^a with a bell crank lever 133, fulcrumed at 133^a. This bell crank lever is connected by a link 134 with a lever 135 fulcrumed at 135^a. The forward end of this lever is arranged to be engaged by a key of the character described with reference to Figs. 7 and 8, when the forward section of such key is pressed down in the rear position. In order to lock the rear section or body of these keys against downward movement when the forward sections are forced back, the frame is provided with a plate 136 (see Fig. 20) with teeth or prongs 137, between which the key levers move, and when the keys are in their rear position, the flange 46^b takes over one of the prongs 137 so that only the slide 48 can move downward.

It will be understood that by depressing the key which operates the back spacing dog 130, the said dog is brought into engagement with the rack 75 and moves the carriage to the right, and the movement of the operating key may be so limited as to feed the carriage to the right the distance of one letter-space. By operating the key twice or more, the carriage may be moved to the right two or more letter spaces. The general features of the carriage construction may be the same as ordinarily used, or any new construction may be employed.

138 is the platen.

139 is the release lever, which, through the medium of links 140, operates on a plate 141, which is guided by oblique slots 141^a and screws 142, so that it may be thrown down against the escapement dogs 77, 78, to throw them away from the rack 75, and thus enable the carriage to be freely moved in either direction.

143 is the lever for producing the line spacing; 144 are paper guides.

In order that tabulating stops may be put on or removed from the rod 101 without removing the margin stops from the carriage, I prefer to construct the said rod with a section 101^a, which is permanently fixed to the carriage, and into which screws the end of the body portion of said rod. The length of the section 101^a is such that it will accommodate the adjacent margin stop. When it is desired to add or remove the tabulating stops, the margin stop is shifted over on section 101^a, then the body of the rod 101 is turned, a screw-head 101^b being provided for this purpose, until the rod becomes separated from the section 101^a, and then additional tabulating stops may be put on, or such stops may be removed, as desired, while the margin stops remain on the carriage.

What I claim as new and desire to secure by Letters-Patent is—

1. In a key operated machine, a carriage, a stop arranged to be projected into the path of the carriage, a key capable of assuming two positions, impression mechanism arranged to be operated by said key in one position thereof, and mechanism for actuating said stop, arranged to be operated by said key in its other position.

2. In a key-operated machine, a carriage, a movable stop arranged to arrest the carriage, a key having two different movements, impression mechanism arranged to be operated by one movement of said key, and mechanism for actuating said stop, arranged to be operated by the other movement of said key.

3. In a key-operated machine, a carriage, a movable stop arranged to arrest the carriage, an extensible key, impression mechanism arranged to be operated by said key in one of its positions, and mechanism for actuating said stop, arranged to be operated by the key in another position.

4. In a key-operated machine, a carriage, a movable stop arranged to arrest the carriage, a plurality of keys each capable of assuming two positions, impression mechanism controlled by each key in one position thereof, and mechanism connected with said stop and arranged to be operated by the keys in their other positions, and arranged to vary the action of said stop according as one or the other of the keys is actuated.

5. In a key-operated machine, a type-actuating key capable of two positions, and a carriage-arresting stop arranged to be operated by a movement of said key when in one of its positions.

6. In a key-operated machine, a type-actuating key capable of two positions, a carriage arresting stop arranged to be operated by a movement of said key when in one of its positions, and means for preventing the key, when in said position, from acting on the type-mechanism.

7. In a key-operated machine, a double function key having two different movements, a carriage arresting stop arranged to be operated by one movement of said key, and other mechanism arranged to be operated by the other movement of said key.

8. In a key-operated machine, a double function key having two different movements, a carriage arresting stop arranged to be operated by one movement of said key, and other mechanism arranged to be operated by the other movement of said key, and means for preventing the key, when it operates the stop, from acting on said other mechanism.

9. In a key-operated machine, a key arranged to separately actuate a printing mechanism and a tabulating stop.

10. In a key-operated machine, a key arranged to separately actuate a printing mechanism and a carriage-release mechanism to free the carriage from its step by step feed mechanism.

11. In a key-operated machine, a key arranged to separately actuate a printing mechanism and a tabulating mechanism.

12. In a key-operated machine, a double function key having two different movements, a carriage-release mechanism arranged to be operated by one movement of said key, and other mechanism arranged to be operated by the other movement of the key.

13. In a key-operated machine, a double function key having two different movements, a carriage-release mechanism arranged to be operated by one movement of said key, and another mechanism arranged to be operated by the other movement of the key, and means for preventing the key, when it operates the release mechanism from acting on said other mechanism.

14. In a key-operated machine, a double function key having two different movements, a carriage-release mechanism arranged to be operated by one movement of said key, and a carriage arresting stop arranged to be operated by the same movement of the key, and other mechanism arranged to be operated by the other movement of the key.

15. In a key-operated machine, a double function key having two different move-

ments, a carriage-release mechanism arranged to be operated by one movement of said key, and a carriage arresting stop and a carriage brake arranged to be operated by the same movement of the key, and other mechanism arranged to be operated by the other movement of the key.

16. In a key operated machine, a pivoted key member provided with an operating member slidable toward and from the pivot, and different mechanisms actuated by said key member according to the position of its operating member.

17. In a key-operated machine, a longitudinally extensible key member, and different mechanisms actuated by said key member according as it is lengthened or shortened.

18. In a key-operated machine, a pivoted key member provided with an operating member slidable toward and from the pivot, said operating member, when in one position, being movable transversely to the body of the key member against pivotal movement, when the operating member is in said position, and different mechanisms actuated by said key member, according to the position of its operating member.

19. In a key-operated machine, a pivoted key member provided with an operating member slidable toward and from the pivot, and also capable of a transverse movement in relation to the key member body, means for preventing such relative transverse movement in one position of said operating member, so that it will move transversely in unison with the key member body, means for holding the key member body against pivotal movement when the operating member is in its other position, to provide for an independent transverse movement of said member, and different mechanisms actuated by said key member, according to the position of its operating member.

20. In a typewriting machine, or like machine, having a traveling carriage, the combination with the carriage and margin stops carried thereby, said stops being mounted to swing in opposite directions, of permanent stops mounted on the frame of the carriage and arranged for engagement with said margin stops, a bell and a bell-tripping mechanism arranged to be engaged by one of said margin stops and held to move together with one of the permanent stops.

21. In a typewriting machine, a carriage provided with a series of stops and a rod or rail for supporting said stops, and the said rail being made in two detachably connected sections, one of which is of sufficient length to receive one of the stops, whereby additional stops may be placed on said rail without removing any one of the stops from the carriage.

22. A tabulating stop adapted for attach-

ment to the carriage of a typewriting machine, said stop comprising two sections pivotally connected with each other and under the influence of a spring, and a stop proper 5 pivotally connected with one of said sections and adapted to cooperate with the stop on the frame of the machine.

23. A tabulating stop adapted for attachment to the carriage of a typewriting machine, said stop comprising a frame adapted 10 for attachment to the carriage, a stop proper pivoted to said frame and adapted to be engaged by a stop on the frame of the machine, and a latch for holding the said stop 15 in its inactive position.

24. In a typewriting machine, a carriage provided with two rails for supporting tabulating stops, and with a rack adapted for engagement with said stops, in combination 20 with a tabulating stop comprising a section arranged to slide on the said two rails of the carriage, another section pivotally connected with the first named section so as to swing about one of the said rails, said second section being adapted to engage the rack on the 25 carriage, a spring for normally forcing the second section against the rack, a stop proper pivoted to the second section and adapted for engagement with a stop on the frame, 30 and a latch carried by said section and arranged to hold the stop proper in an inactive position.

25. In a typewriting machine or the like, the combination with the frame and the 35 traveling carriage, of an alarm carried by one of said parts, a trip element connected with the alarm and carried by the same part, and a cooperating element mounted on the other part and adapted to engage the trip element, 40 one of said elements being adjustable from its normal position in the direction of the carriage path, whereby the alarm may be actuated a longer or shorter period before the end of the line.

26. In a typewriting machine or the like, the combination with the frame and the carriage, of margin stops mounted upon the carriage, permanent stops mounted on the frame 50 and adapted to engage said margin stops, and means for throwing the permanent stops out of the path of the margin stops.

27. In a typewriting machine or the like, the combination with the frame and the carriage, of a stop mounted on the carriage, another stop mounted on the frame normally 55 in the path of the stop on the carriage, and

means for moving the stop on the frame out of the path of the stop on the carriage.

28. In a typewriting machine or the like, the combination with the frame and the carriage of two margin stops mounted on the carriage, two permanent stops mounted on the frame and adapted to engage said margin stops, and a single key for throwing both permanent stops out of the path of the margin 60 stops. 65

29. In a typewriting machine or the like the combination with the frame and the carriage, of two margin stops mounted on the carriage, two permanent stops mounted to 70 move transversely on the frame, one of said stops being capable in addition of a longitudinal movement against the tension of a spring, while remaining coupled with the other permanent stop for transverse movement, a single key for moving both the permanent stops transversely and out of the 75 path of the margin stops, and a type-lever locking device operated by the longitudinal movement of the said permanent stop. 80

30. In a typewriter or like machine, a depressible member, a key member connected therewith and movable relatively thereto, a printing mechanism and a tabulating 85 mechanism, one of said mechanisms being operated by the depression of both of said members and the other of said mechanisms being operated by moving the key member relatively to the depressible member.

31. In a typewriter or like machine, a 90 movable member, a key member connected therewith and movable relatively thereto, a printing mechanism and a tabulating mechanism, one of said mechanisms being operated by the movement of both of said 95 members, and the other of said mechanism being operated by the movement of the key member relatively to the other member.

32. In a key-operated machine, a type-key having two different movements during 100 one of which it acts to effect an impression, and a carriage release mechanism actuated by the other movement of the type-key to free the carriage from its step by step feed mechanism. 105

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANZ X. WAGNER.

Witnesses:

HERMAN L. WAGNER,
JOHN LOTKA.